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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

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Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

Re: In the Matter of Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services WT Docket No. 94-148.

Dear Mr. Caton:

Enclosed herewith is one (1) original, and 5 (five) copies of our comments to the Notice of Proposed Rulemaking in WT Docket 94-148.

Sincerely,

COMSEARCH

Christopher R. Hardy
Director
Microwave and Satellite Services

Enclosure

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the matter of

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Reorganization and Revision of)
Parts 1,2,21, and 94 of)
the Rules to Establish a New)
Part 101 Governing Terrestrial)
Microwave Fixed Radio Services)

WT Docket No. 94-148

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To: The Commission

COMMENTS OF COMSEARCH

INTRODUCTION

Comsearch hereby respectfully submits comments on the above-captioned Notice of Proposed Rulemaking ("NPRM") to establish a new Part 101 governing terrestrial microwave fixed radio services.

Comsearch has been a provider of frequency engineering and coordination services to the microwave and satellite industry since 1977. In this regard, Comsearch has been an active participant in industry groups, such as the National Spectrum Managers Association (NSMA) and the Telecommunications Industry Association (TIA) to develop industry recommendations and standards to promote efficient use of the radio spectrum. Our experience in both the Operational Fixed (OF) and Common Carrier (CC) microwave bands makes us uniquely qualified to comment in this proceeding.

Comsearch supports the Commission's efforts in this proceeding to consolidate and simplify the rules for Part 21 Common Carrier and

Part 94 Private Operational-Fixed services. We have maintained from the outset of the emerging technologies proceeding that the Commission should dissolve unnecessary distinctions between the two services. We view this action as a natural continuation of the efforts initiated in Docket 92-9 to accommodate users who must relocate to clear spectrum for emerging technologies. An effective rule consolidation is critical to the success of the relocation efforts since it will provide the displaced incumbent microwave users with clear and concise technical and procedural guidelines for operations in the new bands. In addition, we agree with the Commission that a concise consolidation of the Rule Parts will result in a "more efficient use of the microwave spectrum" and "a much simplified and streamlined licensing process."¹ While the NPRM represents a positive step towards consolidation and simplification of the Part 21 and Part 94 Rule parts, it does not go far enough to meet the stated key objectives "to restructure the fixed microwave rules so that they are easier for the public to understand and use, to conform similar rule provisions to the maximum extent possible, to eliminate redundancy, and to remove obsolete language."² Changes to the proposed Part 101 are warranted to more fully meet these objectives.

The Fixed Point-to-Point Communications Section, Network Equipment

¹ See NPRM para. 7.

² See NPRM at para. 1.

Division of the Telecommunications Industry Association("TIA") and the National Spectrum Managers Association, Inc. ("NSMA"), are filing joint comments on the NPRM. In these comments, TIA and NSMA set forth their general support for the Commission's proposals.

TIA and NSMA also request that the Commission adopt certain other changes to the proposed Part 101 which would better accomplish the Commission's key objectives and ensure the private operational fixed point-to-point and common carrier fixed point-to-point microwave licensees could continue serving the public interest.

TIA and NSMA propose that the Commission, as part of the NPRM, revise the proposed rules so that: (i) private and common carrier fixed point-to-point microwave users are treated the same; (ii) user-related rules, such as frequency coordination, interference protection, transition to a new Part 101, and construction, promote spectral efficiency and interference protection; and (iii) equipment-related rules, such as antenna standards and ATPC, reflect industry standards. Comsearch has been involved actively with TIA and NSMA in developing these proposals and we urge the Commission to adopt them.

ATPC and EIRP Limitations

It is evident from the NPRM as well as from the previous ET Docket 92-9 proceeding that there is considerable confusion at the Commission over Automatic Transmitter Power Control (ATPC). In the

NPRM the Commission asks for additional comments on ATPC and states "we are still uncertain of the necessity of including explicit provisions for its use in the rules."³ We would like to provide some further information on this issue. Apparently the Commission believes that the short term increase in transmitter power of ATPC systems would cause the systems to exceed authorized power or to exceed EIRP limitations. However, the industry is not asking for the right to use ATPC in this manner. Users simply want to be able to operate ATPC transmitters at much **lower** power than the authorized maximum. ATPC transmitters reach the authorized maximum only for the short periods of time that deep fading occurs.

Presently, Rule 21.107(c) requires that "the power of each transmitter shall be maintained as near as practicable to the power input or output specified in the instrument of station authorization." Rule 94.45(a)(10) states that "any change in authorized effective radiated power in excess of 3 dB" requires modification of the station license. Automatic Transmitter Power Control systems which are in use today typically reduce the transmitter power 6 to 15 dB below the authorized power. Such operation could be interpreted to violate the Rules cited above. However, we do not believe that the Commission should restrict licensees from operating **below** authorized power. Whether such restriction is the Commission's intent is unclear. We support clarifying this point by including language in Part 101 stating

³ See NPRM at para. 18.

that ATPC equipped transmitters may operate at or below their authorized power. A definition of ATPC must also be included if the term is to be used in the Rules.

We believe that most users support the TSB 10-F guideline that ATPC systems should be licensed at the maximum transmitter power. Further, we do not believe that ATPC should be used to help meet the EIRP restrictions on short links (Rules 21.710(b) and 94.79(b), proposed Rule 101.143(b)). The reliability of an ATPC link is determined by the fade margin available using the maximum power of the transmitter. A restriction that limits the EIRP on a link to a value deemed adequate for reliable communication is equally applicable to a fixed power system or to an ATPC system at maximum power. Thus we believe that the 3 dB ATPC allowance in the EIRP restriction for short links should be removed from Rule 101.143.

The EIRP limitation for short paths given in Rule 101.143(b) is often too restrictive for reliable communication with wider band radio equipment. At the same time, propagation conditions often preclude the use of a higher frequency band, leaving the user with no way to meet reliability objectives. Some users have supported using ATPC to exceed the EIRP limitation (as permitted by the 3 dB allowance in Rule 101.143(b)) in order to increase reliability. We believe that these users' reliability concerns can be addressed by increasing the allowable EIRP for radio systems of bandwidth 10 MHz or greater (regardless of whether they use ATPC). Based on the

foregoing discussion, we view requiring ATPC systems to meet EIRP restrictions at maximum power and the relaxing of EIRP restrictions for short paths that use wideband radio equipment as related issues. We urge the Commission to adopt the proposals regarding path length (EIRP) requirements contained in the joint NSMA/TIA comments.

The guidelines of TSB Bulletin 10-F are to be used to determine when an ATPC system may be coordinated at a power less than maximum and how much less than maximum. For fixed power systems, the power used for frequency coordination normally equals the power indicated on the license. For ATPC systems, however, the power used to analyze the potential interference into other systems may be less than the maximum power indicated on the license. While the Commission needs to be aware of this change, no changes to application forms, licenses, or databases are necessary at this time. The industry is fully capable of managing ATPC pursuant to the TSB 10-F guidelines.

Applications and Licenses

The NPRM states that "This proceeding seeks to bring uniformity to the fixed microwave application processing procedures."⁴ Yet in the proposed rules, CC and OF users are required to use separate

⁴ See NPRM para. 6.

license application forms.⁵ We view the consolidation of the Part 21 (Form 494) and Part 94 (Form 402) as a vital component in streamlining the application and licensing process. Since the technical parameters of a microwave system are consistent regardless of service, the consolidation of forms is appropriate. The implementation of the Commission's proposed electronic filing system would be facilitated by the use of one form and subsequently one set of data elements.⁶ Comsearch suggests that the Commission's development of a consolidated form and streamlined electronic filing system can be best achieved through cooperation with industry representatives.

Frequency Coordination

Comsearch supports the Commission's endorsement of the Part 21 coordination process; however, the NPRM is unclear as to exactly which frequency bands are subject to these procedures.⁷ In the NPRM, the Technical Standards section (Subpart C) which includes frequency coordination procedures is separate and distinct from Subpart H (Private Operational Fixed Microwave Service) and Subpart I (Point to Point Microwave Radio Service). Subpart I references prior coordination in 101.713, but Subpart H does not. Therefore,

⁵ See NPRM Section 101.13 "Application forms and requirements for private operational fixed stations", and Section 101.15 "Application forms for common carrier fixed stations."

⁶ See NPRM para. 11.

⁷ See NPRM para. 16.

it is unclear if application under Subpart H requires compliance with Part 21 prior frequency coordination. This uncertainty exists because there is no requirement for a supplemental showing in Subpart H denoting completion of the prior coordination process. In the Memorandum Opinion and Order in Docket 90-314, the Commission adopted Part 21 coordination procedures for PCS licensees operating in the 1850 - 1990 MHz band.⁸ Since the Commission allowed certain modifications of microwave facilities in the 1.9 GHz band to continue on a co-primary basis, the reciprocal requirement of prior coordination with PCS licensees is necessary to manage the interference potential.⁹ The Commission must make it clear that the frequency coordination rules apply to all fixed point-to-point bands for both private and common carriers.

Congested Areas

Comsearch requests clarification on whether or not future Part 101 licensees under Subpart H must still comply with antenna requirements specified in a 1983 Public Notice.¹⁰ The Public Notice states that licensees in the Private microwave frequency bands must use FCC designated Category A antennas in specific

⁸ See Memorandum Opinion and Order in GEN Docket No. 90-314, released June 13, 1994.

⁹ See Public Notice, "Two Gigahertz Fixed Microwave Licensing Policy," Mimeo No. 23115, May 14, 1992.

¹⁰ Public Notice, Private Microwave Congested Areas (Mimeo No. 4884, released June 11, 1983).

defined congested areas. Since some of these bands are now shared with Common Carrier licensees, Comsearch feels that there should be consistent antenna requirements for all Point-to-Point licensees operating in those bands.

Comsearch is keenly interested in engineering an effective consolidation of Parts 21 and 94 into Part 101. We congratulate the Commission and are confident that the proposed Part 101, with the changes included herein and those proposed in the joint comments of TIA/NSMA, will provide a framework for equitable administration of the spectrum.

Respectfully Submitted,
COMSEARCH

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